

## AMENDMENTS TO THE SPECIFICATION

*Please amend the paragraph in the Abstract section, beginning on page 42, line 1 of the original specification with the following paragraph.*

### ABSTRACT

Methods and apparatus are provided for determining a “Squared Tate pairing” for hyperelliptic curves and using the results ~~so~~ to support at least one cryptographic process. The improved techniques provide increased efficiency and an alternative method to the conventional method of implementing the Tate pairing for Jacobians of hyperelliptic curves. With the Squared Tate pairing for hyperelliptic curves, one may obtain a significant speed-up over a contemporary implementation of the Tate pairing for hyperelliptic curves. The Squared Tate pairing for hyperelliptic curves can be substituted for the Tate pairing for hyperelliptic curves in any applicable cryptographic application.